

Application URL: <https://abhishekm86.github.io/police-neighbourhood-explorer/>

Desired State:

1. The web application should display a preloader as the required initial data loads in the background.
2. Once data is loaded the preloader should hide and the user should be provided with an option to select a force while the neighbourhood selection dropdown remains disabled.
3. Once the user selects a force, the options for neighbourhood selection should be updated. A preloader should be displayed while the neighbourhood choices are populated and should hide once done.
4. Once the user selects the neighbourhood and click on search:
 - a. If events exist for the selection:
 - i. The search form should minimize to the top of the page.
 - ii. A listing of different events for the selection should be displayed.
 - iii. The “Filters” button should become visible in the search form.
 - b. If events do not exist for the selection
 - i. The search form should minimize to the top of the page.
 - ii. A message showing “No events found” for the selection should be displayed.
5. If events are present, the user can filter events by clicking on “Filters” button that shows up.
 - a. Clicking on “Filters” should open up the filters sections.
 - b. The “Event Type” filter should be auto-populated based on the types of events available in the current event list.
 - c. On selecting custom date filter, error should be displayed if:
 - i. Start date is empty
 - ii. End date is empty
 - iii. End date is before the Start date
 - d. Clicking on “Apply filters” should filter the events list based on the filter selections and hide the filters section. A notification should be displayed on the top-right indicating filters have been applied. The “Reset Filters” button should also become visible next to the filters button at this point.
 - e. Clicking on “Close” should close the filter section and change the state of filters form to the current applied filters state(it should reset to default if no filters are applied).
6. Clicking on the “Reset Filters” (*if filters are applied*) should reset the event listing and also reset the filters section form to the default states.

Sample Test Flow:

1. Select "Leicestershire Police" from the forces dropdown.
2. Select "City Center" from the neighbourhood dropdown.
3. Click on "Search".
4. Click on "Filters".
5. Choose Event Type > "Meeting" and When > "Next 30 Days"
6. Click on "Apply Filters"
7. Click on "Reset Filters" to reset applied filters.

Tests:

The tests would be divided into 4 sections:

1. [UI Tests](#)
2. [Functional Tests](#)
3. [Compatibility Tests](#)
4. [Performance Tests](#)

UI Tests:

1. Test that the UI is not breaking.
2. Test that fonts are loaded correctly.
3. Test images are loaded correctly.
4. Ensure spacing between elements is proper.
5. Test for spelling or grammatical errors.
6. Test proper error messages are shown.
7. Test if data populated in dropdown is proper and accurate.
8. Test form elements for intractability and ensure nothing is overlapping them.

Functional Tests:

1. Test application render.
2. Test if API calls are successful and if the data is returned in correct format, proper data is being populated.
3. Test for handling incorrectly formatted data.
4. Test that if API calls fails, proper error handling is present and user is shown relevant/appropriate error message.
5. Test accuracy of filtered data based on applied filters.
6. Test incorrect date selection is handled properly.

Compatibility Tests:

Test for uniformity of output on all supported browsers, operating systems and mobile devices.

1. Supported browsers and OS:
 - a. Chrome (Windows / MacOS / Android) latest 2 versions
 - b. Firefox (Windows / MacOS) latest 2 versions
 - c. Safari (MacOS / Windows) latest 2 versions
 - d. IE 11 (Windows)
 - e. IE Edge (Windows)

Performance Tests:

1. Check number of network calls. keep calls to a minimum.
2. Check the page load times.
3. Check Google page scores. Should ideally be as high as possible.
4. Test complexity of each function and refactor if needed.